

Appl. No. 10/645,081

Amtd. Dated March 26, 2004

Reply to Office Action of February 25, 2004

REMARKS/ARGUMENTS

Claims 1-35 are currently pending in the application. Applicants have amended claims 1, 17 and 32. Applicants request reconsideration of the application in light of the following remarks.

Rejections under 35 U.S.C. § 102

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claims 1-4, 6-8, 10, 12, 17-20, 23-25, 29 and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by Jones (U.S. Patent No. 5,924,783). The Examiner stated that Jones discloses an illumination system with an aperture assembly (15) comprising: two opaque plates 129a and 129b, having radially extending aperture slates (141), the number being equal to the number of lenses in the arrays, the plates being relatively movable from positions between the lens elements to positions that progressively block light passing through the apertures at various ratios. The Examiner further stated that another embodiment has curved circular apertures (citing FIGS 12 and 13).

In response, applicants respectfully submit that the Examiner has mischaracterized the Jones reference and applicants have amended independent claims 1 and 17 to clarify the distinctions between applicants' claimed invention and the cited Jones reference. Applicants thus submit that the amended independent claims are patentably distinct over the cited Jones reference.

Specifically, applicants have amended claim 1 to recite that the "moveable attenuator is configured to block substantially all light through the fly's eye lens array when the at least one moveable attenuator is moved to close all of the plurality of apertures". Applicants submit that such a feature is not taught in Jones, and that the Jones reference in fact teaches away from the claimed invention.

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As recited in independent claim 1, the claimed invention is a dimming device that can be configured to selectively attenuate light transmission through the fly's eye lens array. The amendments to claim 1 clarify that the dimming device can block substantially all light through the fly's eye lens array when the plurality of apertures are closed. As described in applicants' specification, such a dimming device can allow only very small amounts of light to pass and thus can provide large amounts of dimming. Such a large amount of dimming allows the system to precisely control the amount of light even at very low transmission levels and thus can provide good viewability even at very low ambient light levels.

In contrast, the system disclosed in Jones cannot block substantially all light passing through the fly's eye lens array and thus cannot meet the claimed limitations or provide the same dimming control as the claimed invention. Specifically, applicants note that the systems described in Jones all incorporate a large center aperture that is not closable. For example, the large center opening in FIGS. 10 and 11 of Jones, and the center aperture 143 in FIGS. 12 and 13 of Jones. As such, the Jones system will always allow significant portions of light through the fly's eye lens array, even when the other apertures are closed. The Jones system cannot block "substantially all light through the fly's eye lens array" as now claimed and thus cannot provide a similar amount of dimming and the resulting low levels of light transmission.

Furthermore, the Jones reference itself teaches that these center openings are to remain open. Specifically, the Jones reference teaches that the outer apertures are closed to change the f-number of system. See column 6, lines 62-65 of Jones. Maintaining the center opening is necessary in Jones to maintain the desired f-number. Thus, in the example of FIGS. 10 and 11, each aperture plate has a center opening 142 which remains open to provide the desired f-number even as the eight radially extending openings 141 are closed. Likewise, in the example of FIGS. 12 and 13, the aperture plates have elliptical apertures 143 while the center aperture remains open to provide the desired f-number. In both cases the center aperture is designed to pass light from the center lens 150 of the lens array 122 and therefore always provide a significant portion of light onto the display. See FIG 5 of Jones. Thus, the structure and functionality of the Jones device is distinct from the claimed invention, and would provide no motivation to consider such a system.

Applicants thus submit that amended independent claim 1 is patentably distinct over the cited Jones reference. For similar reasons, applicants submit that amended independent claim 17 is

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patentably distinct over the cited reference. Specifically, applicants have amended claim 17 to recite that "the first attenuator and the second attenuator blocks substantially all light through the fly's eye homogenizer when the second attenuator is moved to close all of the plurality of apertures". Thus, amended independent claim 17 is patentably distinct for the same reasons as amended independent claim 1.

Furthermore, as claims 2-16 and 18-29 depend from, and include all the limitations of independent claims 1 and 17 respectively, they are also submitted to be patentably distinct over the cited Jones reference.

With respect to claims 12, 25 and 32, applicants further submit that the cited Jones reference does not disclose a "partial attenuator structure" as recited in those claims. For example, independent claim 32 recites a dimming device with a movable attenuator where the moveable attenuator includes "at least one partial attenuator structure configured to decrease light transmission throughput change relative to movement of the moveable attenuator as the aperture moves from open to closed". As described in applicants' specification, the partial attenuator structure blocks some light but allows some portion of the light to pass. The applicants' specification gives several examples of partial attenuator structures, including filters, halftone patterns and other partial attenuation materials. See applicants' specification at paragraphs [0040] and [0072]. Each of these partial attenuator structures allows some portion of light to pass, while blocking other portions. Applicants can find no such structure in the Jones reference. Instead, the Jones reference describes the aperture plates themselves as being "opaque". See Jones at column 6, lines 49-51. Thus, the aperture plates in Jones are either completely "opaque" or completely "open" in the location of the aperture, with no partial attenuator structures as claimed by the applicants.

Thus, the Jones reference does not disclose a "moveable attenuator" that includes a "partial attenuator structure" as recited in claims 12, 25 and independent claim 32. This conclusion is supported by the fact that the Examiner admitted that the Jones reference did not teach any of the specific partial attenuator structures recited in claims that depend from 12, 25 and 32. For example, the Examiner stated that claim 33, which recites "wherein the partial attenuator structure comprises a neutral density filter", was allowable. Likewise, the Examiner stated that claim 34, which recites "wherein the partial attenuator structure comprises halftone patterns" was also allowable.

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For these reasons applicants submit that claims 12, 25 and 32 are also patentably distinct over the cited references. Furthermore, as claims 33-35 depend from, and include all the limitations of independent claim 32, they are also submitted to be allowable.

Rejections under 35 U.S.C. § 103

To establish a prima facie case of obviousness under 35 U.S.C. § 103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based upon the Applicants' disclosure. A failure to meet any one of these criteria is a failure to establish a prima facie case of obviousness. MPEP §2143.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jones. The Examiner stated that Jones discloses the invention as claimed but sets forth relative movement between aperture plates. The Examiner then concluded that it would have been obvious to one skilled in the art that relative movement could best be enabled by movement of both plates in opposite direction because such movement would maintain the openings centered on the beamlet.

Applicants respectfully disagree, and submit that claim 5 is patentably distinct over the cited reference. As described in applicants' specification, moving the moveable attenuators in opposite directions provides several advantages that would not be obvious to one skilled in the art in light of Jones. First, having multiple attenuators that move in opposite directions allows the attenuators to have a size, shape and position that facilitate a very low insertion loss in the bright state, while allowing the two attenuators to move and block substantially all light in the dark state. Stated another way, having multiple attenuators that move in opposite directions can provide a very large dimming range. See FIGS. 4A, 4B, 4C and 4D and the specification at paragraph [0039]. In contrast, the Jones device is designed to change the f-number of the system and is thus unconcerned with a large dimming range. Applicants can see no reason why providing multiple attenuators that move in opposite direction would provide significant benefit to the device of Jones. As such, one

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skilled in the art would not be led to the dimming device of claim 5 from the Jones reference. For this reason, applicants submit that claim 5 is patentably distinct over the Jones reference.

Indication of Allowable Subject Matter

The Examiner objected to claims 9, 11, 13-16, 21-22, 26-28, 33-35 as being dependent upon a rejected base claim, but indicated these claims would be allowable if the claims were rewritten in independent form. In view of the amendments and remarks above, applicants choose not to rewrite these claims in independent form, as the intervening and independent claims are submitted to be allowable in their present form. Applicants also note that the Examiner has allowed claims 30 and 31 in their original condition.

In summary, and in view of the amendments herein, none of the references cited by the Examiner nor any other known prior art, either alone or in combination, disclose the unique combination of features disclosed in applicant's claims presently on file. For this reason, allowance of all of applicant's claims is respectfully solicited.

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CONCLUSION

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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